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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,500	11/26/2003	Steven T. Fink	245339US6YA	6213

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1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/721,500

Applicant(s)

FINK ET AL.

Examiner

Sylvia R. MacArthur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-8, 11, 12, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Gilchrist et al (US 5,846,375).

Regarding 1: Gilchrist et al teaches a thermally zoned substrate holder 14, comprising:

a base having top and bottom surfaces, the top surface configured to support a substrate,, see Fig. 1.

a plurality of temperature control elements 32A-32D inside the base, each element having a top surface and a bottom surface;

at least one insulator 35, having a lower coefficient of thermal conductivity than a material of the base, the at least one insulator being disposed between the plurality of temperature control elements and substantially thermally separating the plurality of temperature control elements, see Fig. 2.

Regarding claim 2: The apparatus according to claim 1, wherein first and second of the plurality of temperature control elements receive separate fluid flows 38a-d.

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Regarding claim 3: The apparatus according to claim 2, wherein at least one of the fluid flows is substantially circular in the plane of the top surface of the substrate holder, see Figs. 1 and 2.

Regarding 4: The apparatus according to claim 2, wherein the fluid flows are concentric about a central axis of the substrate holder, see Figs. 1 and 2.

Regarding claim 5: The apparatus according to claim 2, wherein the at least one insulator 35 is concentric with the fluid flows.

Regarding claim 6: The apparatus according to claim 1, wherein the plurality of temperature control elements each include at least one heating element, see col.5 lines 9-15.

Regarding claim 7: The apparatus according to Claim 6, wherein each heating element is concentric about a central axis of the substrate holder, see Figs. 1 and 2

Regarding claim 8: The apparatus according to Claim 7, wherein the at least one insulator is concentric with each heating element, a combined set of heating and cooling elements is taught in col. 5 lines 9-15.

Regarding claim 11: The apparatus according to claim 1 , wherein the temperature control elements are radially extending, see Figs. 1 and 2.

Regarding claim 12: The apparatus according to claim 1, wherein the temperature control elements comprise radially extending elements and azimuthally extending elements, see Figs. 1 and 2.

Regarding claim 15: A thermally zoned substrate holder, comprising:
a base having top and bottom surfaces, the top surface configured to support a substrate; a plurality of temperature controlled passages inside the base, each passage having a

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top surface and a bottom surface, insulation means, having a lower coefficient of thermal conductivity than a material of the base, for substantially thermally separating the plurality of temperature controlled passages, the insulating means being disposed between the plurality of temperature controlled passages, see Figs. 1 and 2 and cols. 3-5.

3. Claims 1-13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al (US 6,753,272).

Regarding 1: Lee et al teaches a thermally zoned substrate holder 26, comprising:
a base having top and bottom surfaces, the top surface configured to support a substrate,, see Fig. 1.

a plurality of temperature control elements 32 inside the base, each element having a top surface and a bottom surface;

at least one insulator 42, having a lower coefficient of thermal conductivity than a material of the base, the at least one insulator being disposed between the plurality of temperature control elements and substantially thermally separating the plurality of

Regarding claim 6: The apparatus according to claim 1, wherein the plurality of temperature control elements each include at least one heating element (lamps) see col. 7 line 3..

Regarding claim 7: The apparatus according to Claim 6, wherein each heating element is concentric about a central axis of the substrate holder, see Figs. 2 and 2A.

Regarding claim 8: The apparatus according to Claim 7, wherein the at least one insulator is concentric with each heating element, see Fig. 2.

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Regarding claim 9: The apparatus according to claim 1, further comprising temperature detectors 34 disposed at predetermined positions in the temperature control elements.

Regarding claim 10: The apparatus according to claim 2, further comprising temperature detectors disposed at predetermined positions in the temperature control elements.

Regarding claim 11: The apparatus according to claim 1, wherein the temperature control elements are radially extending, see Fig. 1.

Regarding claim 12: The apparatus according to claim 1, wherein the temperature control elements comprise radially extending elements and azimuthally extending elements, see Figs. 2 and 2A.

Regarding claim 14: The apparatus according to claim 1, wherein the at least one insulator comprises a vacuum-filled chamber, see col. 7 lines 30-36.

Regarding claim 15: A thermally zoned substrate holder, comprising:
a base having top and bottom surfaces, the top surface configured to support a substrate; a plurality of temperature controlled passages inside the base, each passage having a top surface and a bottom surface, insulation means, having a lower coefficient of thermal conductivity than a material of the base, for substantially thermally separating the plurality of temperature controlled passages, the insulating means being disposed between the plurality of temperature controlled passages, see Figs. 1, 2, and 2A and cols. 6 and 7.

4. Claims 1-8, 11-13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Arai et al (US 6,664,738).

Regarding 1: Arai et al teaches a thermally zoned substrate holder S, comprising:

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a base having top and bottom surfaces, the top surface configured to support a substrate,, see Fig.2.

a plurality of temperature control elements 11 and 12 inside the base, each element having a top surface and a bottom surface;

at least one insulator 13, having a lower coefficient of thermal conductivity than a material of the base, the at least one insulator being disposed between the plurality of temperature control elements and substantially thermally separating the plurality of temperature control elements, see Fig. 2.

Regarding claim 2: The apparatus according to claim 1, wherein first and second of the plurality of temperature control elements receive separate fluid flows, col. 2 lines 57-67.

Regarding claim 3: The apparatus according to claim 2, wherein at least one of the fluid flows is substantially circular in the plane of the top surface of the substrate holder, see Figs. 2-4.

Regarding 4: The apparatus according to claim 2, wherein the fluid flows are concentric about a central axis of the substrate holder, see Figs. 3 and 4.

Regarding claim 5: The apparatus according to claim 2, wherein the at least one insulator 13 is concentric with the fluid flows.

Regarding claim 6: The apparatus according to claim 1, wherein the plurality of temperature control elements each include at least one heating element, see col.4 line 50.

Regarding claim 7: The apparatus according to Claim 6, wherein each heating element is concentric about a central axis of the substrate holder, see Figs. 3 and 4

Regarding claim 8: The apparatus according to Claim 7, wherein the at least one insulator is concentric with each heating element 11/12, see Fig. 4

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Regarding claim 11: The apparatus according to claim 1, wherein the temperature control elements are radially extending, see Figs.3 and 4.

Regarding claim 12: The apparatus according to claim 1, wherein the temperature control elements comprise radially extending elements and azimuthally extending elements, see Figs. 1 and 2.

Regarding claim 13: The apparatus according to claim 1, wherein the at least one insulator comprises a gas-filled chamber 13, see col. 7 lines 17-31.

Regarding claim 15: A thermally zoned substrate holder, comprising:
a base having top and bottom surfaces, the top surface configured to support a substrate; a plurality of temperature controlled passages inside the base, each passage having a top surface and a bottom surface, insulation means, having a lower coefficient of thermal conductivity than a material of the base, for substantially thermally separating the plurality of temperature controlled passages, the insulating means being disposed between the plurality of temperature controlled passages, see Figs. 2-4 and cols. 4-8.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sylvia R MacArthur
Patent Examiner
Art Unit 1763

August 28, 2005